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Deputy Director for Technology

ARPA-E Mission

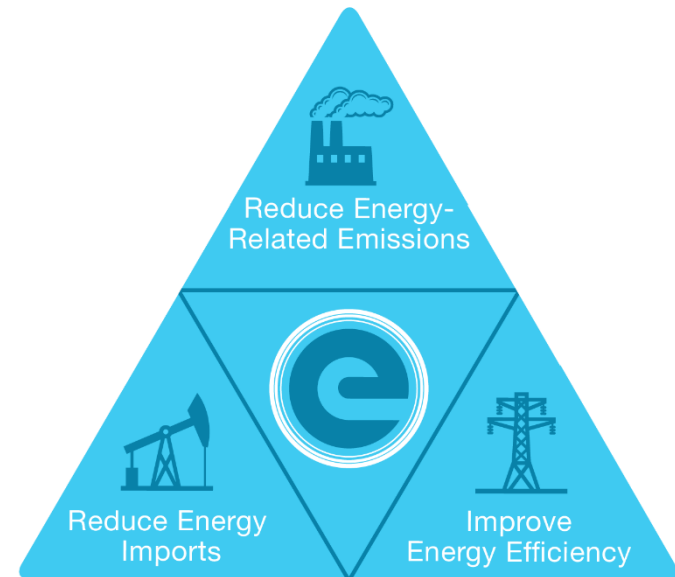
Mission: To overcome long-term and high-risk technological barriers in the development of energy technologies

Goals: Ensure America's

- Economic Security
- Energy Security
- Technological Lead in Advanced Energy Technologies

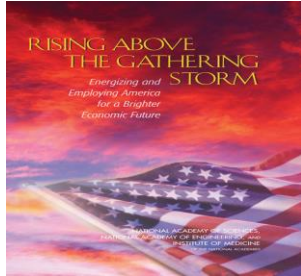
Means:

- Identify and promote revolutionary advances in fundamental and applied sciences
- Translate scientific discoveries and cutting-edge inventions into technological innovations
- Accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty

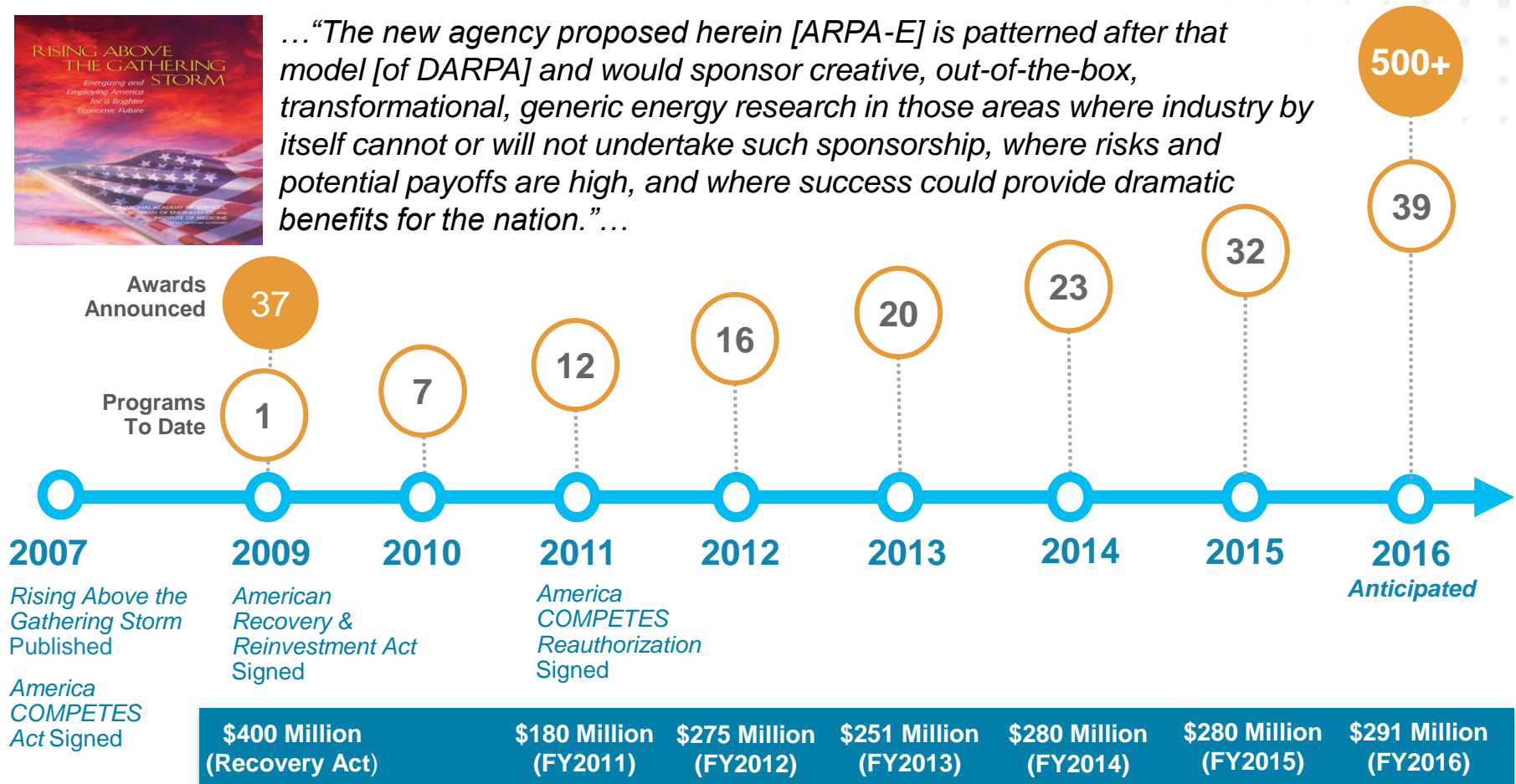


ARPA-E's History

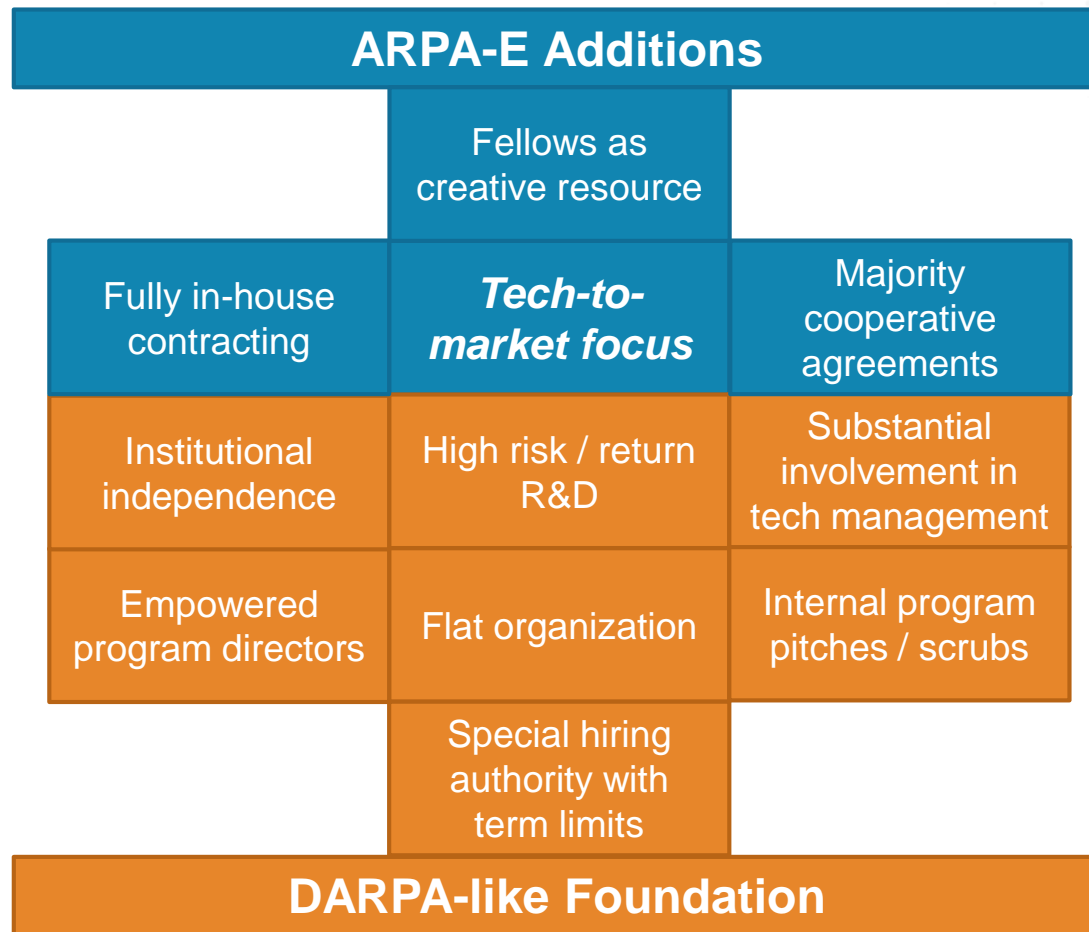
In 2007, The National Academies recommended Congress establish an Advanced Research Projects Agency within the U.S. Department of Energy*



...“The new agency proposed herein [ARPA-E] is patterned after that model [of DARPA] and would sponsor creative, out-of-the-box, transformational, generic energy research in those areas where industry by itself cannot or will not undertake such sponsorship, where risks and potential payoffs are high, and where success could provide dramatic benefits for the nation.”...



Built on DARPA foundation, but still evolving...



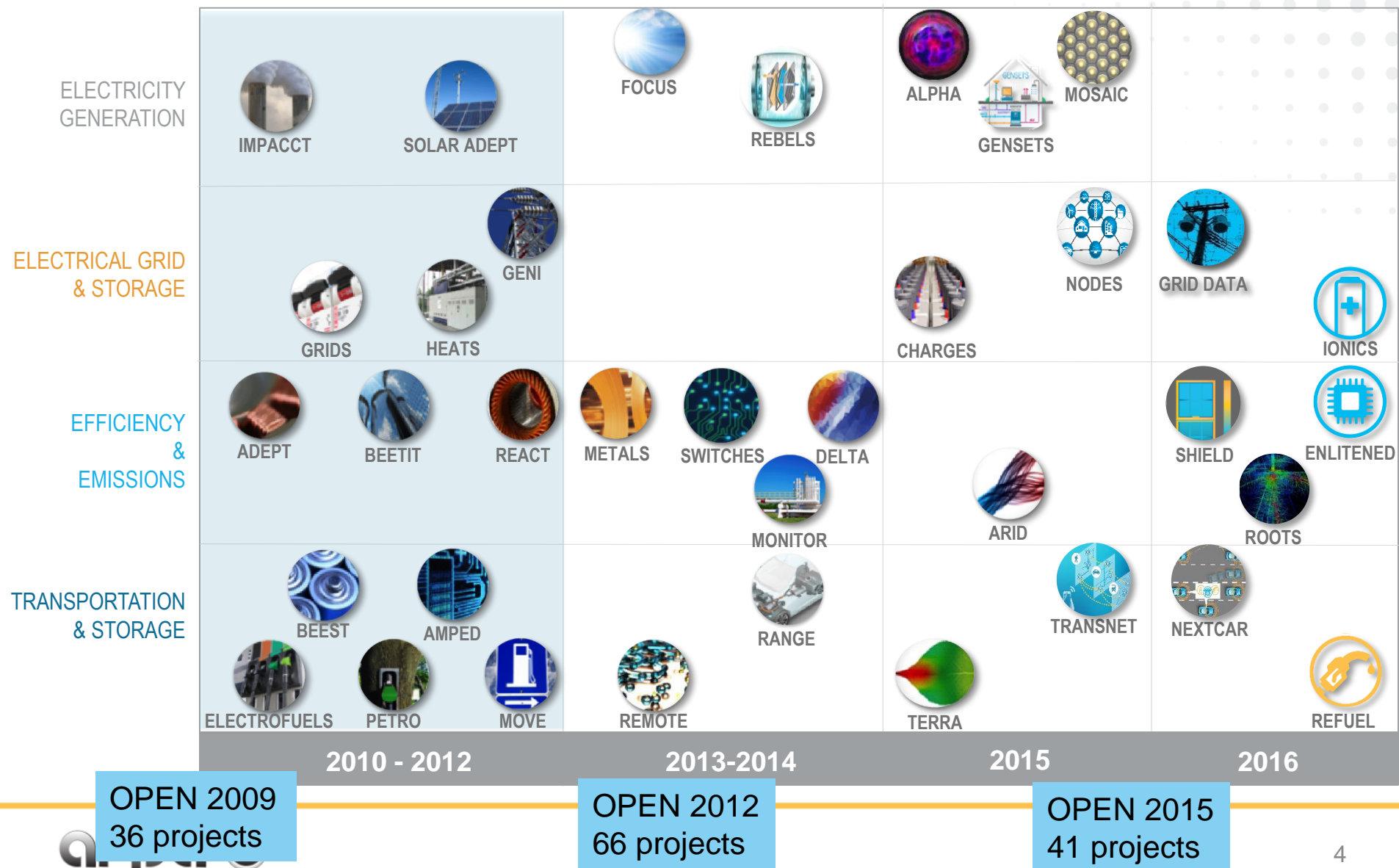
Unique to DARPA:

Staged prototype demonstrations

Large-scale systems integration

Primary “customer” (DoD)

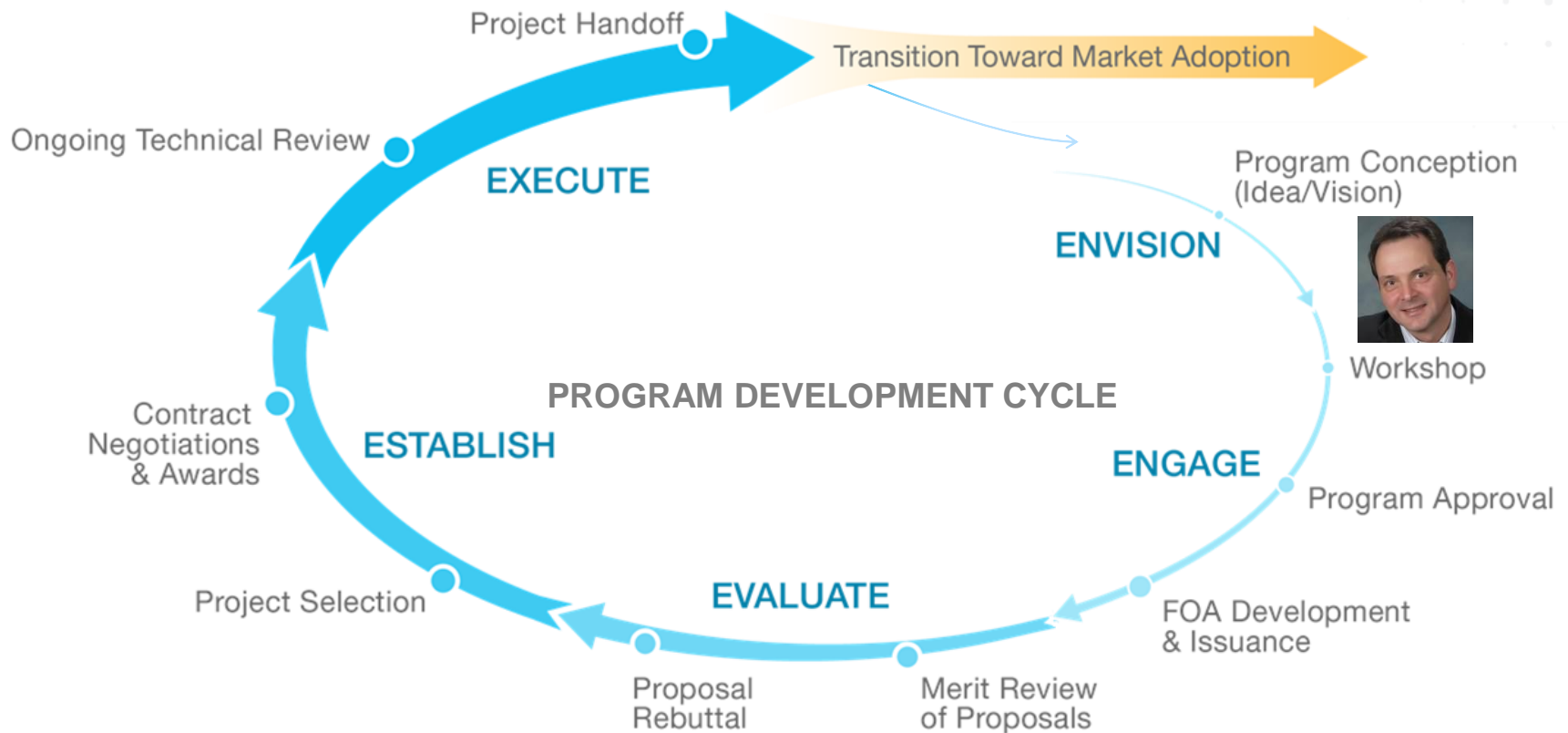
ARPA-E Programs and OPENs



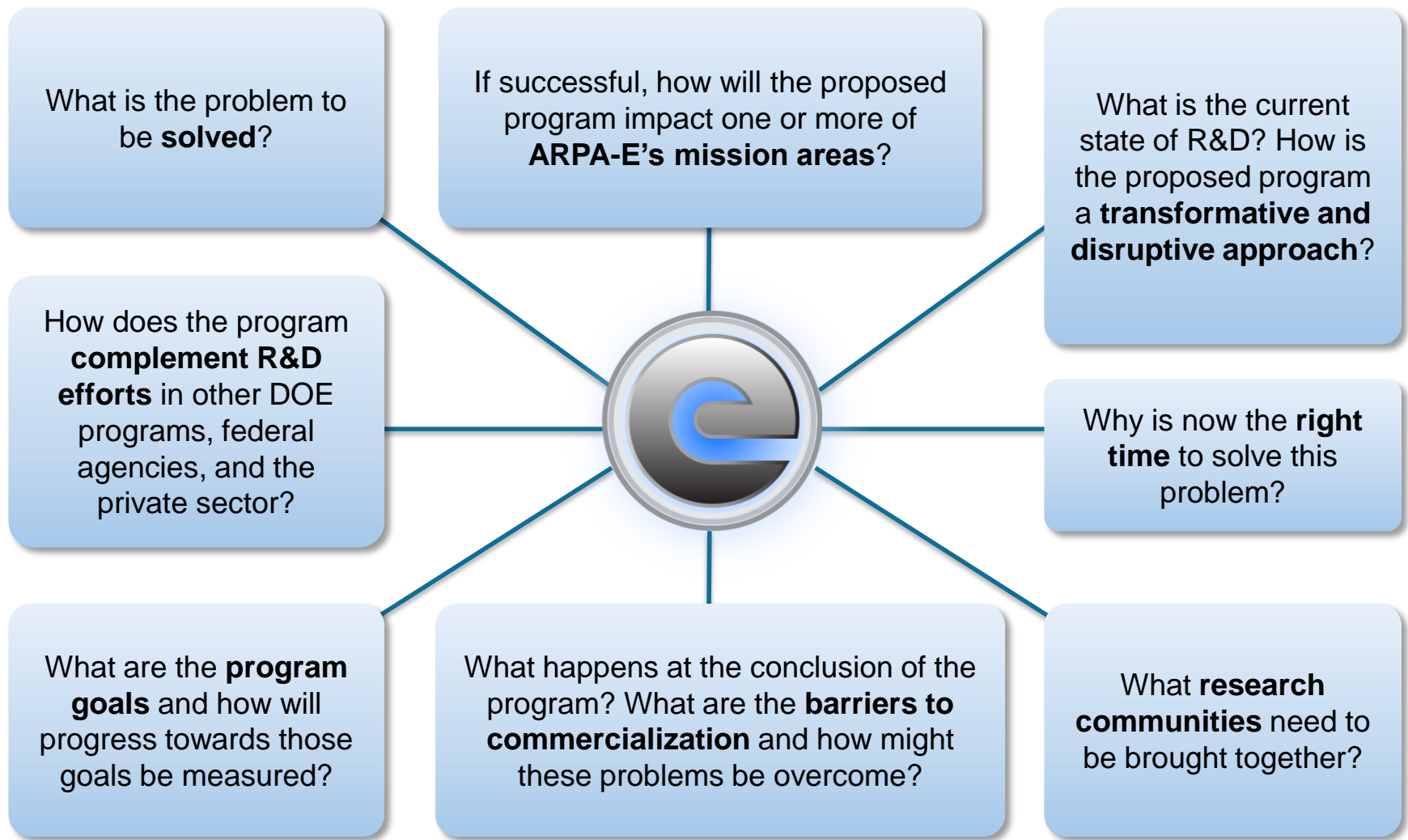
Developing ARPA-E Focused Programs



ARPA-E Program Directors



ARPA-E Program Framing Questions

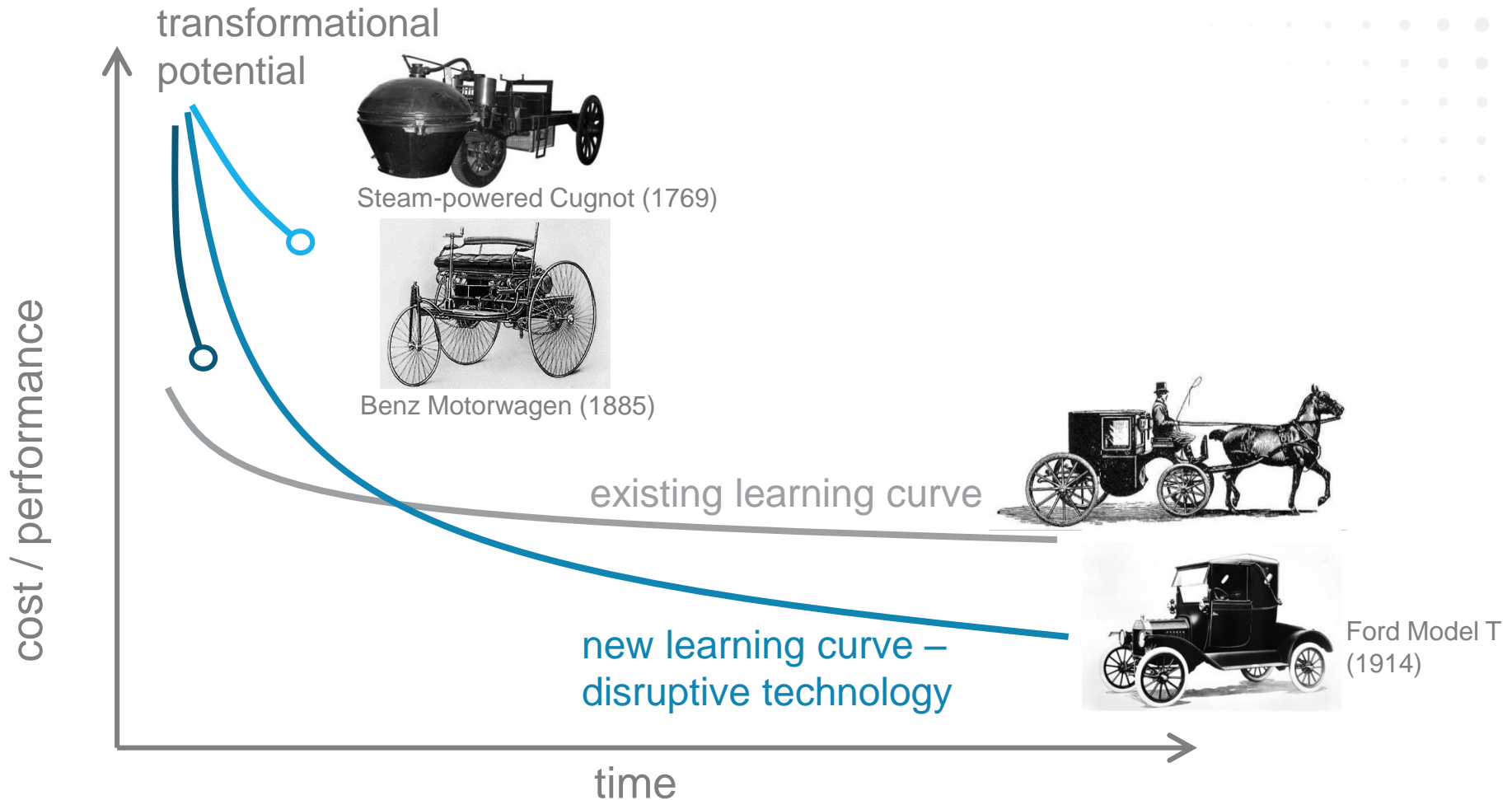




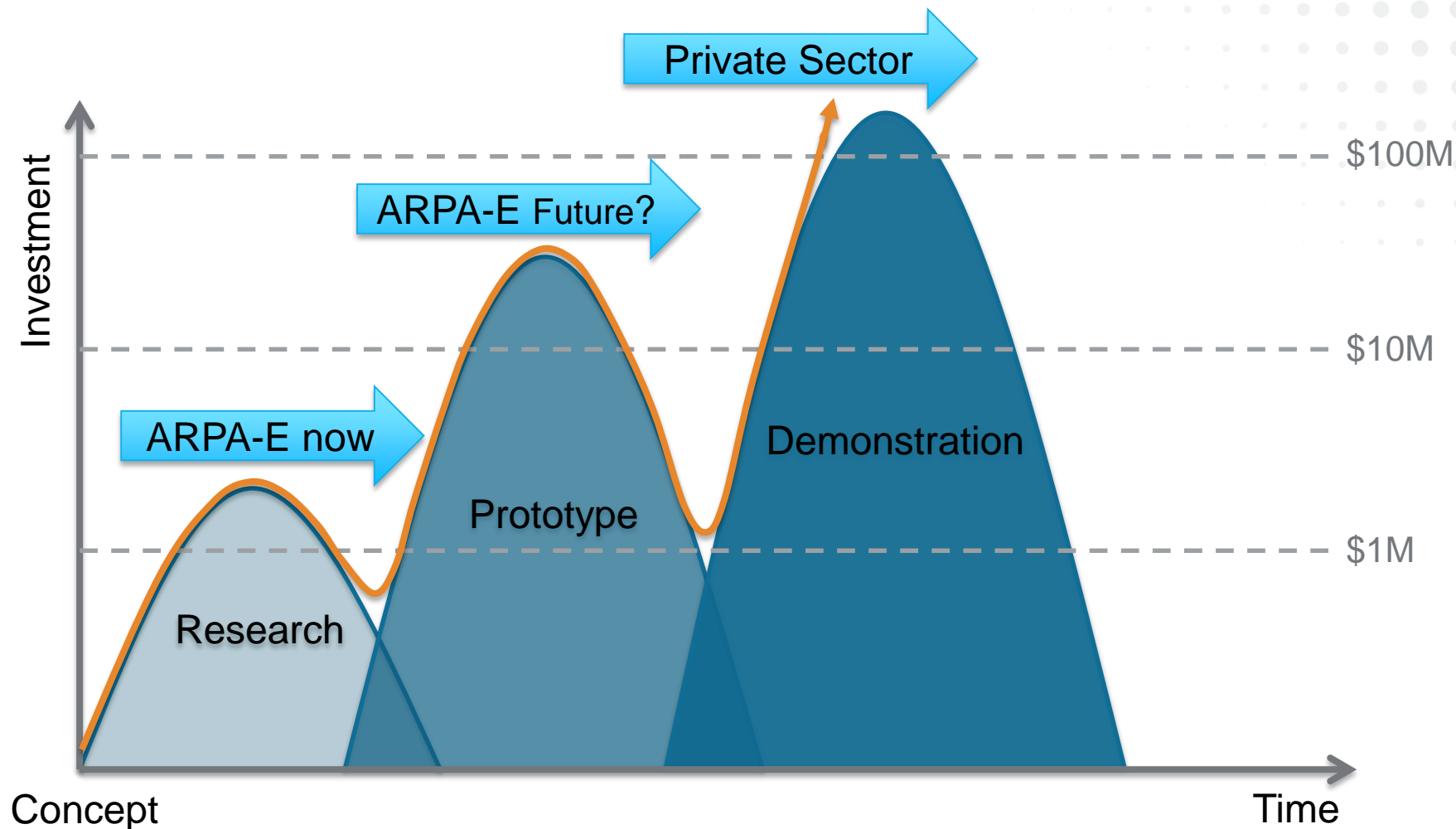
If it works...

will it matter?

ARPA-E goal: Disruptive technologies

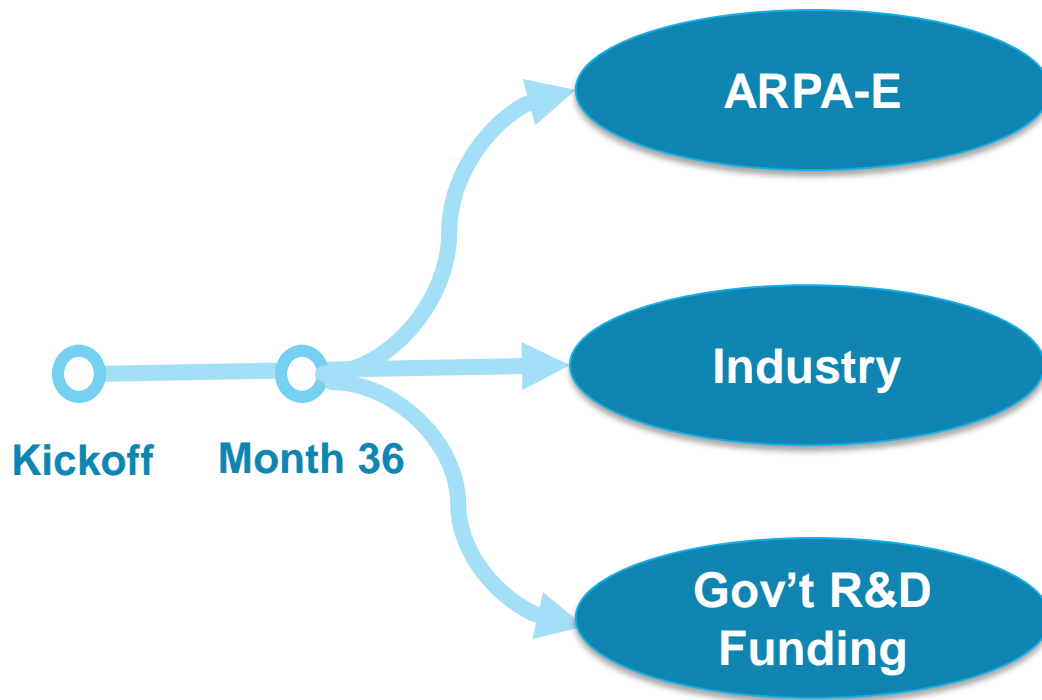


Energy Technology “Mountains of Opportunity”



Technology to Market (T2M)

- ▶ What happens to this project when the funding runs out?



Why month 37 matters so much

- **Return on the public dollar** – publishing is great, but we're here to move a market
- **Momentum** – Teams have clear view on what's required next
- **Team** – maintain institutional knowledge
- **Thought leadership** – Validate that we've hit upon an idea that really matters

Measuring ARPA-E's Success

Since 2009 ARPA-E has invested approximately \$1.3 billion across over 500 projects, through 32 focused programs and 3 open funding solicitations.

For all alumni and current projects:

- ▶ Follow-on Funding
 - 45 projects have attracted more than \$1.25 billion from the private sector
- ▶ Partnerships with other government agencies
 - 60 government projects
- ▶ New company formation
 - 36 new companies formed



Want to work at ARPA-E? There may be a role for you!



Program Director

- Program development
- Active project management
- Thought leadership
- Explore new technical areas

Technology-to-Market Advisor

- Business development
- Technical marketing
- Techno-economic analyses
- Stakeholder outreach

Fellow

- Independent energy technology development
- Program Director support
- Organizational support



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